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steel or, alternatively, cylinders may be packed in a rigid outer packaging that meets the Packing Group I performance level when tested as prepared for transport, and that is designed and constructed to protect the cylinder and valve from puncture or damage that may result in release of the gas.

(e) *Interconnection*. Cylinders may not be manifolded or connected. This provision does not apply to MEGCs containing Hazard Zone B materials in accordance with § 173.312.

[67 FR 51642, Aug. 8, 2002, as amended at 67 FR 61289, Sept. 30, 2002; 68 FR 24660, May 8, 2003; 71 FR 33880, June 12, 2006]

Subpart C—Definitions, Classification and Packaging for Class 1

SOURCE: Amdt. 173–224, 55 FR 52617, Dec. 21, 1990, unless otherwise noted.

§ 173.50 Class 1—Definitions.

(a) *Explosive*. For the purposes of this subchapter, an *explosive* means any substance or article, including a device, which is designed to function by explosion (*i.e.*, an extremely rapid release of gas and heat) or which, by chemical reaction within itself, is able to function in a similar manner even if not designed to function by explosion, unless the substance or article is otherwise classed under the provisions of this subchapter. The term includes a pyrotechnic substance or article, unless the substance or article is otherwise classed under the provisions of this subchapter.

(b) Explosives in Class 1 are divided into six divisions as follows:

(1) *Division 1.1* consists of explosives that have a mass explosion hazard. A mass explosion is one which affects almost the entire load instantaneously.

(2) *Division 1.2* consists of explosives that have a projection hazard but not a mass explosion hazard.

(3) *Division 1.3* consists of explosives that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.

(4) *Division 1.4* consists of explosives that present a minor explosion hazard. The explosive effects are largely con-

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fined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package.

(5) *Division 1.5*¹ consists of very insensitive explosives. This division is comprised of substances which have a mass explosion hazard but are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport.

(6) *Division 1.6*² consists of extremely insensitive articles which do not have a mass explosive hazard. This division is comprised of articles which contain only extremely insensitive detonating substances and which demonstrate a negligible probability of accidental initiation or propagation.

[Amdt. 173–224, 55 FR 52617 Dec. 21, 1990, as amended at 56 FR 66267, Dec. 20, 1991; 66 FR 45183, Aug. 28, 2001; 68 FR 48569, Aug. 14, 2003]

§ 173.51 Authorization to offer and transport explosives.

(a) Unless otherwise provided in this subpart, no person may offer for transportation or transport an explosive, unless it has been tested and classed and approved by the Associate Administrator (§ 173.56).

(b) Reports of explosives approved by the Department of Defense or the Department of Energy must be filed with, and receive acknowledgement in writing by, the Associate Administrator prior to such explosives being offered for transportation.

[Amdt. 173–224, 55 FR 52617, Dec. 21, 1990, as amended by 66 FR 45379, Aug. 28, 2001]

§ 173.52 Classification codes and compatibility groups of explosives.

(a) The classification code for an explosive, which is assigned by the Associate Administrator in accordance with this subpart, consists of the division number followed by the compatibility group letter. Compatibility group letters are used to specify the controls for

¹The probability of transition from burning to detonation is greater when large quantities are transported in a vessel.

²The risk from articles of Division 1.6 is limited to the explosion of a single article.

the transportation, and storage related thereto, of explosives and to prevent an increase in hazard that might result if certain types of explosives were stored or transported together. Transportation compatibility requirements for carriers are prescribed in §§174.81, 175.78, 176.83 and 177.848 of this subchapter for transportation by rail, air, vessel, and public highway, respectively, and storage incidental thereto.

(b) Compatibility groups and classification codes for the various types of explosives are set forth in the following tables. Table 1 sets forth compatibility groups and classification codes for substances and articles described in the first column of table 1. Table 2 shows the number of classification codes that are possible within each explosive division. Altogether, there are 35 possible classification codes for explosives.

TABLE 1—CLASSIFICATION CODES

Description of substances or article to be classified	Compat- ibility group	Classi- fication code
Primary explosive substance	A	1.1A
Article containing a primary explosive substance and not containing two or more effective protective features. Some articles, such as detonators for blasting, detonator assemblies for blasting and primers, cap-type, are included, even though they do not contain primary explosives..	B	1.1B 1.2B 1.4B
Propellant explosive substance or other deflagrating explosive substance or article containing such explosive substance.	C	1.1C 1.2C 1.3C 1.4C
Secondary detonating explosive substance or black powder or article containing a secondary detonating explosive substance, in each case without means of initiation and without a propelling charge, or article containing a primary explosive substance and containing two or more effective protective features.	D	1.1D 1.2D 1.4D 1.5D
Article containing a secondary detonating explosive substance, without means of initiation, with a propelling charge (other than one containing flammable liquid or gel or hypergolic liquid).	E	1.1E 1.2E 1.4E
Article containing a secondary detonating explosive substance with its means of initiation, with a propelling charge (other than one containing flammable liquid or gel or hypergolic liquid) or without a propelling charge.	F	1.1F 1.2F 1.3F 1.4F
Pyrotechnic substance or article containing a pyrotechnic substance, or article containing both an explosive substance and an illuminating, incendiary, tear-producing or smoke-producing substance (other than a water-activated article or one containing white phosphorus, phosphide or flammable liquid or gel or hypergolic liquid).	G	1.1G 1.2G 1.3G 1.4G
Article containing both an explosive substance and white phosphorus	H	1.2H 1.3H
Article containing both an explosive substance and flammable liquid or gel	J	1.1J 1.2J 1.3J
Article containing both an explosive substance and a toxic chemical agent	K	1.2K 1.3K
Explosive substance or article containing an explosive substance and presenting a special risk (e.g., due to water-activation or presence of hypergolic liquids, phosphides or pyrophoric substances) needing isolation of each type.	L	1.1L 1.2L 1.3L
Articles containing only extremely insensitive detonating substances.	N	1.6N
Substance or article so packed or designed that any hazardous effects arising from accidental functioning are limited to the extent that they do not significantly hinder or prohibit fire fighting or other emergency response efforts in the immediate vicinity of the package.	S	1.4S

TABLE 2—SCHEME OF CLASSIFICATION OF EXPLOSIVES, COMBINATION OF HAZARD DIVISION WITH COMPATIBILITY GROUP

Hazard division	Compatibility group													
	A	B	C	D	E	F	G	H	J	K	L	N	S	A-S
1.1	1.1A	1.1B	1.1C	1.1D	1.1E	1.1F	1.1G	.....	1.1J	.....	1.1L	.....	.....	9
1.2	.....	1.2B	1.2C	1.2D	1.2E	1.2F	1.2G	1.2H	1.2J	1.2K	1.2L	.....	.....	10
1.3	1.3C	1.3F	1.3G	1.3H	1.3J	1.3K	1.3L	7
1.4	1.4B	1.4C	1.4D	1.4E	1.4F	1.4G	1.4S	7
1.5	1.5D	1
1.6	1.6N	1
1.6	1	3	4	4	3	4	4	2	3	2	3	1	1	35

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[Amdt. 173–224, 55 FR 52617, Dec. 21, 1990, as amended by Amdt. 173–241, 59 FR 67492, Dec. 29, 1994; 64 FR 51918, Sept. 27, 1999; 66 FR 45379, Aug. 28, 2001]

§ 173.53 Provisions for using old classifications of explosives.

Where the classification system in effect prior to January 1, 1991, is referenced in State or local laws, ordinances or regulations not pertaining to the transportation of hazardous materials, the following table may be used to compare old and new hazard class names:

Current classification	Class name prior to Jan. 1, 1991
Division 1.1	Class A explosives.
Division 1.2	Class A or Class B explosives.
Division 1.3	Class B explosive.
Division 1.4	Class C explosives.
Division 1.5	Blasting agents.
Division 1.6	No applicable hazard class.

§ 173.54 Forbidden explosives.

Unless otherwise provided in this subchapter, the following explosives shall not be offered for transportation or transported:

(a) An explosive that has not been approved in accordance with § 173.56 of this subpart.

(b) An explosive mixture or device containing a chlorate and also containing:

(1) An ammonium salt, including a substituted ammonium or quaternary ammonium salt; or

(2) An acidic substance, including a salt of a weak base and a strong acid.

(c) A leaking or damaged package or article containing an explosive.

(d) Propellants that are unstable, condemned or deteriorated.

(e) Nitroglycerin, diethylene glycol dinitrate, or any other liquid explosives not specifically authorized by this subchapter.

(f) A loaded firearm (except as provided in 49 CFR 1544.219).

(g) Fireworks that combine an explosive and a detonator.

(h) Fireworks containing yellow or white phosphorus.

(i) A toy torpedo, the maximum outside dimension of which exceeds 23 mm (0.906 inch), or a toy torpedo containing a mixture of potassium chlorate, black antimony (antimony sulfide), and sulfur, if the weight of the explosive mate-

rial in the device exceeds 0.26 g (0.01 ounce).

(j) Explosives specifically forbidden in the § 172.101 table of this subchapter.

(k) Explosives not meeting the acceptance criteria specified in § 173.57 of this subchapter.

(l) An explosive article with its means of initiation or ignition installed, unless approved in accordance with § 173.56.

[Amdt. 173–224, 55 FR 52617 Dec. 21, 1990, as amended at 56 FR 66267, Dec. 20, 1991; Amdt. 173–236, 58 FR 50236, Sept. 24, 1993; 67 FR 61013, Sept. 27, 2002; 68 FR 48569, Aug. 14, 2003]

§ 173.55 [Reserved]

§ 173.56 New explosives—definition and procedures for classification and approval.

(a) Definition of new explosive. For the purposes of this subchapter a *new explosive* means an explosive produced by a person who:

(1) Has not previously produced that explosive; or

(2) Has previously produced that explosive but has made a change in the formulation, design or process so as to alter any of the properties of the explosive. An explosive will not be considered a “new explosive” if an agency listed in paragraph (b) of this section has determined, and confirmed in writing to the Associate Administrator, that there are no significant differences in hazard characteristics from the explosive previously approved.

(b) Examination, classing and approval. Except as provided in paragraph (j) of this section, no person may offer a new explosive for transportation unless that person has specified to the examining agency the ranges of composition of ingredients and compounds, showing the intended manufacturing tolerances in the composition of substances or design of articles which will be allowed in that material or device, and unless it has been examined, classed and approved as follows:

(1) Except for an explosive made by or under the direction or supervision of the Department of Defense (DOD) or the Department of Energy (DOE), a